

We claim:

1. In a data replication system having two sites each including a host computer and a node comprising a pair of array controllers coupled to a data storage array, a method for maintaining a consistent view of the data across a group of logical units, the method comprising:
  - establishing, in memory for each said host computer, correspondence between an association set name and a remote copy set name for each member of the group of logical units to generate an association set; and
  - in a user-selectable Fail All mode, failing any I/O directed to any member of the association set when any said member of the association set fails.
2. The method of claim 1, further comprising registering, with each said host computer, an identifier for each said logical unit, to establish an association therebetween.
3. The method of claim 1, wherein a log unit is located on the data storage array, and every said member of the association set shares the same log unit.
4. The method of claim 1, further comprising logging all transactions between the host computer and the data storage array in order with respect to all logical units in the association set.
5. The method of claim 1, wherein the two sites are interconnected by two Fibre channel fabric links.
6. The method of claim 1, wherein a log unit is located on the data storage array, and every said logical unit in the association set shares the same said log unit.
7. In a data replication system having two sites each including a host computer and a node comprising a pair of array controllers coupled to a data storage

array, a method for maintaining a consistent view of the data across a group of logical units, the method comprising:

establishing, in memory for each said host computer, correspondence between an association set name and a remote copy set name for each member of  
5 the group of logical units to generate an association set; and  
in a user-selectable Write Fail mode, failing any I/O directed to any member of the association set when a write operation to any said member of the association results in an irrecoverable write error.

8. The method of claim 7, further comprising registering, with each said  
10 host computer, an identifier for each said logical unit, to establish an association therebetween.

9. The method of claim 7, wherein a log unit is located on the data storage array, and every said member of the association set shares the same log unit.

10. The method of claim 7, further comprising logging all transactions  
15 between the host computer and the data storage array in order with respect to all logical units in the association set.

11. The method of claim 7, wherein the two sites are interconnected by two Fibre channel fabric links.

12. The method of claim 7, wherein a log unit is located on the data  
20 storage array, and every said logical unit in the association set shares the same said log unit.

13. In a data replication system having two sites each including a host computer and a node comprising a pair of array controllers coupled to a data storage array, a method for maintaining a consistent view of the data across a group of  
25 logical units, the method comprising the steps of:

establishing, in memory for each said host computer, correspondence between an association set name and a plurality of logical units to generate an association set, wherein each of the logical units is a member of a remote copy set; and

5           in a user-selectable Fail All mode, failing any I/O directed to any member of the association set when any said member of the association set fails.

14.       The method of claim 13, wherein a log unit is located on the data storage array, and every said member of the association set shares the same log unit.

15           15.       The method of claim 13, further comprising logging all transactions  
10 between the host computer and the data storage array in order with respect to all logical units in the association set.

16.       The method of claim 13, further comprising registering, with each said host computer, an identifier for each said logical unit, to establish an association therebetween.

15           17.       In a data replication system having two sites each including a host computer and a node comprising a pair of array controllers coupled to a data storage array, a method for maintaining a consistent view of the data across a group of logical units, the method comprising the steps of:

              establishing, in memory for each said host computer, correspondence  
20 between an association set name and a plurality of logical units to generate an association set, wherein each of the logical units is a member of a remote copy set; and

              in a user-selectable Write Fail mode, failing any I/O directed to any member of the association set when a write operation to any said member of the association  
25 results in an irrecoverable write error.

18.       The method of claim 13, wherein a log unit is located on the data storage array, and every said member of the association set shares the same log unit.

19. The method of claim 13, further comprising logging all transactions between the host computer and the data storage array in order with respect to all logical units in the association set.

20. The method of claim 13, further comprising registering, with each  
5 said host computer, an identifier for each said logical unit, to establish an association therebetween.